No. 20,323. Water Heater. (*Réchauffeur d'Eau.*)

Marmaduke Matthews, Toronto, Ont., 1st October, 1884 ; 5 years.

Claim.—1st. A burner A, provided with the air-tube *a*, and an air-space *b* between the air-tube *a* and wick *c*, in combination with the deflector B and flue or chimney C carried through the boiler E, substantially as and for the purpose specified. 2nd. A burner A, provided with an air-tube *a*, arranged to support a perforated deflector B, in combination with the deflector D, arranged substantially as and for the purpose specified. 3rd. A burner A, provided with a flue or chimney C passing through a boiler E, in combination with the coil F supported over the flue C and connected to the boiler E, substantially as and for the purpose specified.

No. 20,324. Spring Tooth Harrow.

(*Herse à Dents Elastiques.*)

Thoms Gray, Oshawa, Ont., 1st October, 1884 ; 5 years.

Claim.—1st. In spring tooth harrows, a harrow frame with tooth supporting bars extending outside the frame, and said bars or beams carrying with both inside and outside the frame, substantially as and for the purpose shown. 2nd. A harrow frame carrying and supporting tooth bars or beams that will tilt or raise for the purpose of adjusting the teeth for deep or light work, substantially as and for the purpose shown. 3rd. A spring tooth with an offset or angle at one end, so adjusted as to fit the frame or bar it may be attached to, for the purpose of holding said tooth in proper position, substantially as and for the purpose shown. 4th. A spring harrow tooth thickened from the front back at the point or end that works in the ground, substantially as and for the purpose shown. 5th. A spring harrow tooth having its bow or curved part above, below and behind its connection with the bar or frame it is attached to, substantially as and for the purpose shown. 6th. The combination of the spring tooth and socket, said socket to receive a portion or part of the tooth, together with a part of the tooth bar or frame, and all the said parts to be securely fastened by means of one or more wedges or keys, substantially as and for the purpsose shown.

No. 20,325. Cash and Parcel Carrier.

(*Système de Transport de la Monnaie et des Paquets.*)

Herbert L. Randale, (co-inventor with William H. Jones,) Montreal, Que., 1st October, 1884 ; 5 years.

Claim.—1st. The combination of the tube G having openings a^2 and b^2, tube H having openings *c*, b^2, straps *d*, levers *i* and pawl *h*, boxes *a* having projections K^1 with pulleys L, M, and band K having projections N, the whole substantially as described. 2nd. The combination of the tubes G and H, provided with slots I, openings *b*, a^2, *c*, b^2, as described, pulleys L, M and l^1, band K having projections N and springs m^1, traps *d*, operated as described, and with box *a*, the whole substantially as described. 3rd. The combination of the tube G having openings *b*, a^2, tube H having openings *c*, b^2 and traps *d*, constructed as described and shown, with box *a*, operated as described, and platform *n*, the whole constructed and arranged substantially as described. 4th. The combination, in a tube, as described, provided with traps, as described, and with levers *i* and pawls *h*, arranged as described, with boxes *a* provided with grooves g^1, f^1 and projections k^1, the whole constructed, arranged and operated substantially as described.

No. 20,326. Carpenter's Gauge. (*Trusquin.*)

George S. Forrest and Philip Pethick, Concord, N.H., U.S., 1st October, 1884 ; 5 years.

Claim.—1st. In a carpenter's gauge, the combination of the gauge-bar A having at either end the marking points B projecting from opposite sides thereof, with the double headed slide D provided with the thumb screw E, operating substantially as and for the purpose set forth. 2nd. In a carpenter's gauge consisting of a gauge bar having suitable marking-points, and a movable head provided with a thumb screw for setting the same, the adjustable tongues D, D^1 having marking-brads B^1, B^1 for use as a gauge fitted to grooves in said gauge-bar, and movable head forming ways upon which said head may move, substantially, in the manner and for the purpose set forth. 3rd. In a carpenters' gauge consisting of a gauge-bar having suitable marking-points, and a movable head provided with a thumb-screw for setting the same, the adjustable tongues D, D^1 having marking-brads B^1, B^1 for use as a gauge fitted to grooves in said gauge-bar, and movable head forming ways upon which said head may move, and suitable springs E secured within the grooves in said head and bearing against said tongues D, D^1, substantially as and for the purpose set forth. 4th. In a carpenters gauge consisting of a gauge-bar having suitable marking-points, and a movable head provided with a thumb screw for setting the same, the adjustable tongues D, D^1 having marking brads B^1, B^1 for use as a gauge fitted to grooves in said gage bar, and movable head forming ways upon which said head may move and suitable springs E, fastened upon the tongues D, D^1 and bearing against one side of the grooves in the movable head, substantially as described, and for the purpose specified. 5th. In a carpenters' gauge, the combination, with one or more marking-brads, of the set pin C acting against said brads for the purpose of holding them in position, constructed and operated substantially in the manner described and set forth. 6th. In a carpenters' gauge the following combination, the adjustable tongues D, D^1 and tongue *d* having marking-brads B^1, *b*, with the gauge bar A having grooves *a*, a^1, the adjustable tongues D, D^1 and tongue *d* having marking-brads B^1, *b*, with the movable head F, and the fastening or set pin C having flattened side *c* and slot c^1 with the marking-brads, all constructed and operating substantially in the manner and for the purpose specified.

No. 20,327. Automatic Grain Binder.

(*Lieuse Antomatique à Grain.*)

The Massey Manufacturing Company, Toronto, Ont. (assignee of William N. Whitely, Springfield, Ohio, U. S.), 1st October, 1884 ; 5 years.

Claim.—1st. A butt rake 2 located on the elevator frame, and butt board 1 working in line with the deck platform of binding devices, but independent thereof. 2nd. A butt rake 2 connected with the butt board by a link 13, and carried on and driven by a crank 4 located on the elevator frame independent of the binder platform, as set forth and described. 3rd. The butt rake 2 and driving rake 4, with the shaft 5 and bevel-gear 6, in combination with combined bracket and pipe-box 7, which holds all in place on the elevator frame. 4th. A butt rake mounted above the binder deck or platform, in combination with a relief rake at the foot of the elevator and shafts 5, 13 and 16, whereby said rakes are driven by the same shafts, substantially as set forth. 5th. The shafts 16, in bearings at the front and rear ends of the machine, and receiving power at its rear end from the prime mover, combined with the shafts 5 and 13, actuated by said shaft 16, the butt rake 2, relief rake F and reel G, driven by chain from shaft 13, all actuated by power transmitted by said shaft 16. 6th. A head relief rake located over the binder table between the rear end of binder and needle arm, in combination with the packing and knotting devices. 7th. The head rake 18 located on top and at the rear of binder above the inflowing grain, mounted on and driven by a crank, substantially as shown and described. 8th. A head rake located above the binder platform and inflowing grain, in combination with the crank whereon the said rake is carried, and the driving chain and cog-gear engaged with the packer-shaft, for the purpose set forth. 9th. A butt rake, in combination with a grain-binding device. 10th. A head rake, butt rake and relief rake, in combination with binding device and harvester. 11th. A head rake, in combination with a grain-binding device. 12th. A head rake formed like a hand with fingers, in combination with mechanism arranged to operate the head rake, so that it shall sweep the grain like a human hand. 13th. The grain-binding mechanism, longitudinally adjustable upon the harvester machine, combined with a head rake mounted on said bind r, so as to move with it when shifting back and forth. 14th. The grain-binding mechanism, longitudinally adjustable upon the harvester and provided with a head rake mounted upon the binder and movable therewith, in combination with a butt rake mounted upon the frame of the elevator and independent of the binder, as set forth. 15th. In an automatic grain-binder longitudinally adjustable on the harvester in combination with the automatic grain packers of said binders working beneath the platform and nearer the butts of the grain, a butt rake located over and close to the binder platform, but entirely independent thereof, for the purpose of clearing the elevator butts and raking the grain over the binding table. 16th. In an automatic grain-binder and in combination with devices for placing the band and securing the ends of the same, the packers working upwardly through the platform, a head rake mounted above the platform and inflowing grain, and a butt rake arranged and operating substantially as set forth. 17th. In an automatic grain-binder, longitudinally adjustable on the harvester and in combination with the devices against which the grain is compressed, the packers working from below upwardly through the platform of the binder, a head rake mounted on said binder above the platfoam and inflowing grain, said packer and head rake being movable with the binder and a rake mounted on the frame of the elevator indepeadent of the binder butt, substantially as set forth. 18th. An automatic grain-bidder longitudinally adjustable upon the harvester, and provided with a butt rake independent of the binder, and a head rake carried on and moving with said binder, combined with a shield cover in two parts, one part attached to and moving with the binder, the other part rigidly attached to the harvester and arranged substantially as set forth. 19th. The automatic binder longitudinally adjustable on the harvester, provided with the shield 47, attached to and movable with said binder, combined with the stationary shield 42 and butt board 1, both mounted upon the stationary elevator frame. 20th. The head rake and its crank-shaft 21 combined with packer crank shaft 26, the standard 23 and the sprocket-wheels and connecting chains, whereby the head rake is actuated by the packer-shaft, as set forth. 21st. The shafts 21 and 26, with their sprocket wheels and the connecting chain, the extensible standard 23 combined with clamping bolt, eccentric or cam washer 26 and stud 37, by which the said extensible standard 23, combined with clamping bolt, eccentric or cam washer 26, and stud 37, by which the said extensible standard is held securely in adjustment, as set forth. 22nd. The extensible standard 23, made in two parts, capable of longitudinal motion upon each other, combined with eccentric or cam washer 36 attached to and moving with one part, and the stud 37 attached to and moving with the other part, as and for the purpose set forth. 23rd. The braces 33, fastened at one end to the rear sill and near the other, and supported by the rear elevator post 39, with slotted holes for the fastening bolts and a seat for the hub of wheel 32, thereby forming and adjustable support for the rear end of the packer shaft. 24th. The bracket 38, with seat arm bolted on the rear elevator post 39, making a combined support for the twine box 41 and packer-shaped brace 33. 25th. The wheel 32 provided with a hub having flanges to retain it in its seat in the brace 33, combined with a longitudinally-grooved shaft 31, and, the sliding gib key 34, whereby the said shaft may turn the said wheel while moving endwise without moving said wheel from its plane. 26th. The driving-wheel 34, the driving chain and train of sprocket-wheels driven thereby, and the idler combined with the cranked axle, whereby said idler may be adjusted, as desired.

No. 20,328. Hanger for Sliding Doors.

(*Ferrure pour Portes en Coulisse.*)

Benjamin J. Cloes, Lake Bluff, and Charles B. George, Waukegan, Ill., U.S., 1st October, 1884 ; 5 years.

Claim.—1st. In a hanger for sliding doors, the combination of two angle-irons secured one to the upper part of the door and the other to the wall of the structure above the door in reverse order and overlapping each other, whereby the horizontal portion of the one attached to the door lies above the horizontal portion of the one at-